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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,779	12/11/2003	Kenneth H. Purser	527P021	8962
7590	11/18/2004		EXAMINER VANORE, DAVID A	
Henry C. Nields Nields & Lemack Suite 7 176 E. Main Street Westboro, MA 01581			ART UNIT	PAPER NUMBER
			2881	
DATE MAILED: 11/18/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/733,779

Applicant(s)

PURSER ET AL.

Examiner

David A Vanore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 11 and 15-17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 09/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 9-10, and 12-14 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Benveniste et al.

Benveniste et al. teaches a method and apparatus for measuring emittance characteristics of an ion beam by producing a plurality of ion beamlets by impacting an ion beam on a perforated plate (Fig. 8) having a diameter greater than that of the ion beam, a plurality of apertures which allow beamlets to pass through said plate and impinge on a detection means such that a current distribution of each beamlet is used to measure the emittance and angular distribution of the individual beamlets (Fig. 10a, 10b, and 10c) as recited in claims 1-5.

Benveniste et al. teaches that the apertures in the plate are cylindrical apertures arranged in a close packed array as recited in claims 6 and 9 (Fig. 8 and 9).

Benveniste et al. teaches that the detector is made out of a conductive plate covered by an insulating layer with conductive elements distributed thereon which measures ion currents arriving at the conductive elements, in the same geometry as the geometric distribution as the apertures of the perforated plate (Note Item 130 and Col. 4 through Col. 5 Line 7) as recited in claims 10 and 12.

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Benveniste et al. teaches means for imparting relative motion between the plate and detection means as recited in claim 13.

Noting Fig. 1, Benveniste et al. teaches that the ion beam is larger than mask and detector as recited in claim 14 because the claim recites the term "size." The beam as many sized features which are necessarily larger than the mask and detector.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Benveniste et al.

Regarding claims 7 and 8, Benveniste et al. teaches all the limitations required in claim 4 as pointed out above and further teaches the use of cylindrical apertures arranged in a closely packed array as required in claims 6 and 9.

Benveniste et al. fails to teach apertures arranged as a rectangular array in the form of slots as required in claims 8 and 7 respectively.

Forming the apertures as slots or arranging the apertures in a rectangular array is an alteration of the shape and distribution of the apertures taught in the prior art of Benveniste et al.

Absent any criticality of the shape and distribution of the apertures, it would have been obvious to one having ordinary skill in the art to change the shape and arrangement of the apertures taught in Benveniste et al. because it has been held that to change the shape or arrangement of elements taught in the prior is an obvious modification unless a new and unexpected result is achieved.

***Allowable Subject Matter***

Claims 11 and 15-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to disclose the apparatus of claim 10 where the conductive elements are semiconductor material. For example, Benveniste et al. teaches that the conductive elements are composed of metal which is a conductor, not semiconductor as recited in claim 11.

The prior art fails to disclose the apparatus of claim 14 further comprising a mask and detector which are rigidly connected such that said mask and detector are mechanically scanned together as recited in claim 15. Benveniste et al. teaches, for example, that the mask and detector are separately articulated to effect mechanical scanning through an ion beam.

The prior art fails to disclose the apparatus of claim 4 where the detector produces secondary electrons and directs them onto a phosphorescent screen as recited in claims 16-17. The prior art, especially Benveniste et al., teach that charged

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particles are impacted onto a conductive metal ring coupled to an electronic circuit which measures beam current.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The examiner further cites USPN 6,677,598 B1 (Benveniste) which teaches an ion beam emittance and uniformity measuring apparatus and method but was patented and filed after the priority date of the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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